

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 April 2006 (27.04.2006)

PCT

(10) International Publication Number
WO 2006/044857 A3

(51) International Patent Classification:
A61K 39/12 (2006.01) *C12Q 1/70* (2006.01)

(74) Agent: MICHAUD, Susan, M.; Clark & Elbing LLP, 101
Federal Street, Boston, MA 02110 (US).

(21) International Application Number:
PCT/US2005/037369

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY,
MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO,
NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,
SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 19 October 2005 (19.10.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/620,466 20 October 2004 (20.10.2004) US
60/620,948 21 October 2004 (21.10.2004) US
60/674,415 24 April 2005 (24.04.2005) US
60/674,546 25 April 2005 (25.04.2005) US
60/718,923 19 September 2005 (19.09.2005) US

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,
RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (for all designated States except US): ACAM-BIS INC. [US/US]; 38 Sidney Street, Cambridge, MA 02139 (US).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
10 August 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: VACCINES AGAINST JAPANESE ENCEPHALITIS VIRUS AND WEST NILE VIRUS

(57) Abstract: The invention provides attenuated Flavivirus vaccines, such as vaccines against Japanese encephalitis virus and West Nile virus, as well as methods of making and using these vaccines.

WO 2006/044857 A3

INTERNATIONAL SEARCH REPORT

International application No.	
PCT/US05/37369	

A. CLASSIFICATION OF SUBJECT MATTER

IPC: A61K 39/12(2006.01);C12Q 1/70(2006.01)

USPC: 424/218.1;435/5

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/218.1; 435/5

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MONATH, T.P Recombinant, chimeric live, attenuated vaccine (ChimeriVaxTM) incorporating the envelope genes of Japanese encephalitis (SA14-14-2) virus and the capsid and nonstructural genes of yellow fever (17D) virus is safe, immunogenic and protective in non-human primates, Vaccine, 1999, Vol. 17, pages 1869-1882.	1-10, 42-45
---		-----
A		11-41

<input type="checkbox"/>	Further documents are listed in the continuation of Box C.	<input type="checkbox"/>	See patent family annex.
*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 30 May 2006 (30.05.2006)	Date of mailing of the international search report 20 JUN 2006
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer: Stacy B. Chen <i>Valerie Bell-Harris</i> Telephone No. 571-272-1600

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/37369

Continuation of B. FIELDS SEARCHED Item 3:
EAST, MEDLINE, BIOSIS, EMBASE, CAPLUS, SCISEARCH
search terms: quirakhoo, liu, catalan, monath, pugachev, flavivirus, yf-17D, japanese encephalitis, west nile, chimeric, mutation, deletion, recombinant, helix, vaccine, immunogenic